



Dart Hawkesbury
1270 Aberdeen St
Hawkesbury, ON K6A 1K7 Canada
Tel (613) 632-5200
Fax 613 632-5246

Purchasing Receipts

PO No	Supplier	Line Item No	Rel No	Terms	Purchased Item	Description	For Part No	Project	Equipment ID	Order Qty	Due Date	Received Quantity	Accounting Job No	Container No	Status	Receive Date	Price/Unit	Aging Days	Past Due	Total	Supplier Name	
PO040612	MEC002-VU	1	1	Net 30	M7075T6S6.000X0.250	7075-T6S Sheet 6" Thick Plate X 0.25" Wide : MATERIAL: 7075-T6/T62 ALUMINUM SHEET AS PER QQ-A- 250/12 OR AMS-QQ-A- 250/12 OR AMS 4045 OR ASTM B209 receive ft				80	8/24/2018	84		S102371	Stock	8/14/2018	\$ 14.35 / ft	1		\$1,209.56	Metaux Castle	
		2			M7075T6S6.000X1.000	7075-T6S Sheet 6" Thick Plate X 1" Wide : MATERIAL: 7075-T6/T62 ALUMINUM SHEET AS PER QQ-A- 250/12 OR AMS-QQ-A- 250/12 OR AMS 4045 OR ASTM B209 receive ft				60		60		S102372	Stock	8/14/2018	\$ 43.42 / ft	1		\$2,613.88	Metaux Castle	
		3			M7075T6S1.500X1.500	7075-T6S Sheet 1.5" Thick Plate X 1.5" Wide : MATERIAL: 7075-T6/T62 ALUMINUM SHEET AS PER QQ-A- 250/12 OR AMS-QQ-A- 250/12 OR AMS 4045 OR ASTM B209 receive ft				80		84		S102373	Stock	8/14/2018	\$ 20.50 / ft	1		\$1,727.95	Metaux Castle	
										Total:	220	229										\$5,551.39



Castle Metals®

A. M. Castle & Co.

PACKING SLIP/
CERTIFICATE OF CONFORMANCE

Page 1 of 1

Shipment No:3672863


Ship From: A. M. CASTLE & CO. 2150 ARGENTIA ROAD MISSISSAUGA, ON L5N 2K7 CAN	Sold To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA	Ship To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CAN	Deliver To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA
Date Shipped 13-AUG-18	F.O.B. ORIGIN	Freight Terms Prepaid	Carrier MANITOU LIN
			BOL No 3672863-2

Shipment Details

Final Destination Branch - TOR

Order No 5214452	Line No 1	Item No 750023.MO	Description 0.2500.PL.7075.T651.ALUMINUM.48.5000.144.5000 CUT 2SIDED TO 6 IN (+ .1250/- .0000 IN) X 144.5 IN (+ .1250/- .0000 IN) - ALUMINUM PLATE SAW SPECIFICATIONS: AMS-QQ-A-250/12
Purchase Order No 40612	Part Number	Ordered Qty 7.00 PCS	Invoice Qty 7.00 PCS

Details
ALL PAPERWORK MUST FOLLOW ORDER / CUSTOMER MUST RECEIVE AT TIME OF DELIVERY
ALL MATERIAL MUST HAVE IDENTIFYING MARKINGS EX:HEAT #S
Email P/s and certs to: clavoie@dartaero.com
END USER: DART AEROSPACE
END USE: COMMERCIAL AIRCRAFT PARTS

Delivery No. 122018109	Mill/Source KAISER ALUMINUM	Heat Number  241692B3	Mech Id	PCS 7	Width (IN)	Length (IN)	Shipped Qty(LBS) 159.9850
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We hereby certify the material covered by this certification conforms in accordance with the above specifications and has been found to meet the applicable requirements for the material, including any specifications forming a part of the description. Test reports are on file subject to examination. All claims for defective material are waived unless made in writing to A.M. Castle & Co. within 60 days of the shipment. Material cut to the correct size, or material cut by the customer, will not be returned for credit.

Reviewed by Authorized Castle Metals Representative:

Date: **AUG 13 2018**

Name: **JEFF KALOUS**





Castle Metals®

**PACKING SLIP/
CERTIFICATE OF CONFORMANCE**

A. M. Castle & Co.

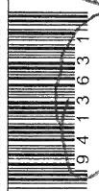
Page 1 of 1

Shipment No:3672863

Ship From: A. M. CASTLE & CO. 2150 ARGENTIA ROAD MISSISSAUGA, ON L5N 2K7 CAN		Sold To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA	Ship To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CAN	Deliver To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA
Date Shipped 13-AUG-18	F.O.B. ORIGIN	Freight Terms Prepaid	Carrier MANITOU LIN	BOL No 3672863-2

Shipment Details

Order No	Line No	Item No	Description
5214452	2	752188.MO	1.0000.PL.7075.T651.ALUMINUM.USI.48.5000.144.5000 CUT 2SIDED TO 6 IN (+ .1250/- .0000 IN) X 144.5 IN (+ .1250/- .0000 IN) - ALUMINUM PLATE SAW SPECIFICATIONS: AMS-QQ-A-250/12
Purchase Order No 40612	Part Number	Ordered Qty 5.00 PCS	Invoice Qty 5.00 PCS
Details ALL PAPERWORK MUST FOLLOW ORDER / CUSTOMER MUST RECEIVE AT TIME OF DELIVERY ALL MATERIAL MUST HAVE IDENTIFYING MARKINGS EX:HEAT #'S Email P/s and certs to: clavoie@dartaero.com END USER: DART AEROSPACE END USE: COMMERCIAL AIRCRAFT PARTS			

Delivery No.	Mill/Source	Heat Number	Mech Id	PCS	Width (IN)	Length (IN)	Shipped Qty(LBS)
122018109	CONSTELLUM ROLLED PRODUCTS	 94136311		5			451.4090

We hereby certify the material covered by this certification conforms in accordance with the above specifications and has been found to meet the applicable requirements for the material, including any specific requirements for the description. Test reports are on file subject to examination. All claims for defective material are waived unless made in writing within 60 days of the shipment date. If the material is found to be defective, the customer cannot be returned for credit.		Reviewed by Authorized Castle Metals Representative:		Date:	Name:

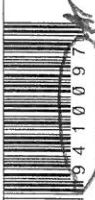


PACKING SLIP/
CERTIFICATE OF CONFORMANCE

Shipment No:3672863

Ship From:	Sold To:	Ship To:	Deliver To:
A. M. CASTLE & CO. 2150 ARGENTIA ROAD MISSISSAUGA, ON L5N 2K7 CAN	DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA	DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CAN	DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA
Date Shipped	F.O.B.	Freight Terms	Carrier
13-AUG-18	ORIGIN	Prepaid	MANITOULIN
			BOL No
			36728632

[illegible]

Order No	Line No	Item No	Description				
5214452	3	750412.MO	1.5000.PL.7075.T651.ALUMINUM.US1.48.5000.144.5000 CUT 2SIDED TO 1.5 IN (+ .1250/- .0000 IN) X 144.5 IN (+ .1250/- .0000 IN) - ALUMINUM PLATE SAW SPECIFICATIONS: AMS-QQ-A-250/12				
Purchase Order No		Part Number	Ordered Qty	Invoice Qty			
40612			7.00 PCS	7.00 PCS			
Details		ALL PAPERWORK MUST FOLLOW ORDER / CUSTOMER MUST RECEIVE AT TIME OF DELIVERY ALL MATERIAL MUST HAVE IDENTIFYING MARKINGS EX:HEAT #S Email P/s and certs to: clavoie@dartaero.com END USER: DART AEROSPACE END USE: COMMERCIAL AIRCRAFT PARTS					
Delivery No.	Mill/Source	Heat Number	Mech Id	PCS	Width (IN)	Length (IN)	Shipped Qty(LBS)
122018109	CONSTELLUM ROLLED PRODUCTS	 194110097		7			234.6141

We hereby certify the material covered by this certification conforms with the above specifications and has been found to meet the applicable requirements for the material. Including any specifications for the material, the customer cannot be returned for credit.

STRAIGHT BILL OF LADING - SHORT FORM - ORIGINAL - NOT NEGOTIABLE RECEIVED, Subject to the classification and tariffs in effect on the date of issue of this Bill of Lading. The property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Uniform Freight Classification in effect on the date hereof, if this is a rail or rail-water shipment, or (2) in the applicable motor carrier classification or tariff this is a motor carrier shipment.		Shipper No.: 3672863-2 FROM AT: A. M. Castle & Co. 2150 ARGENTIA ROAD MISSISSAUGA ON L5N 2K7 CAN
Consigned To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY ON K6A 1K7 CAN		Delivery instructions: ALL LOADS MUST BE TARPED. DELIVER PACKING LIST AND TEST REPORTS OR CONSIGNEE WILL REFUSE.
Carrier Name: MANITOULIN		Payment Terms: Prepaid REMIT FREIGHT INVOICES TO: RayTrans Management, Inc. PO Box 1210 Washington PA 15301
Additional Insurance Coverage: The agreed or declare value for the property is hereby specifically stated by the shipper to be not exceeding: _____ per _____		

Shipment Breakdown:

Quantity	Packaging	Packaging Dim's L X W X H	Class	Commodity
2	BUNDLE		50	Metal Product
1	SKID	145 X 12 X 12	50	Metal Product

Shipment Weights:

Product	846 LBS
Dunnage	50 LBS
Gross	896 LBS

ORDER DETAIL:

Customer PO	Sales Order No.	Line No.	Castle Item No.	Quantity Shipped	Castle UOM
40612	5214452	2	5214452*2*1	5	PCS
40612	5214452	3	5214452*3*1	7	PCS
40612	5214452	1	5214452*1*1	7	PCS

Subject to Section 7 of Conditions of applicable bill of Lading. If this shipment is to be delivered to the consignee without recourse to the consignor, the consignor shall sign the following statements. The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.	If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading shall state whether it is "carrier's or shipper's weight." NOTE: Where the rate is dependent on value, the shippers are required to state specifically in writing the agreed or declared value of the property.
THIS SHIPMENT IS TO BE TENDER RECEIVED AND TO BE CARRIED SUBJECT TO ALL TERMS AND CONDITIONS OF THE STEAMSHIP COMPANIES CURRENT FORM BILL OF LADING	The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding
THIS IS TO CERTIFY THAT THE ABOVE NAMED ARTICLES ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION.	Customer is responsible for all shipping documents and compliance with United States and Canadian laws, including but not limited to U.S. and Canadian Export laws and regulations.

SHIPPER, PER: _____ insert creator's name		Shipper No.: 3672863-2 Per _____ Date 08/13/18
PROOF OF DELIVERY: _____ Signature / Date		Driver's Signature _____ Name _____ Please Print Name Here _____ FB
		All pages must be signed Page 1 of 1

TR - 59595
TL - 644063





Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER PO040612

Supplier: MEC002-VU
Metaux Castle
P.O. Box 4090 Stn A
Toronto
ON
M5W OE9 Canada

Ship To: 1270 Aberdeen Street
Hawkesbury
ON
K6A 1K7 Canada
Phone: 613-632-5200

PO No: PO040612
PO Date: 7/26/18
Due Date: 8/22/18
**Purchase Order
Revision:**
Revision Date:
Ship-To Contact: Lavoie, Chantal
Phone: clavoie@dartaero.com

Via: Ground
Pymt Terms: Net 30
Freight Terms:
Special Comments:

Revised

Line Item	Job	Part	Supplier Part No	Description	Status	Account	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (USD)	Extended Price
1 DAS 61 9-89		M7075T6S6.000X0.250		7075-T6S Sheet 6" Thick Plate X 0.25" Wide : MATERIAL: 7075-T6/T62 ALUMINUM SHEET AS PER QQ-A-250/12 OR AMS-QQ-A-250/12 OR AMS 4045 OR ASTM B209 receive ft	Firmed	-	8/22/18	80 ft	84.25 ft	80 ft	\$14.35/ft At 18/02/15	\$1,148.00
2 DAS 61 9-89		M7075T6S6.000X1.000		7075-T6S Sheet 6" Thick Plate X 1" Wide : MATERIAL: 7075-T6/T62 ALUMINUM SHEET AS PER QQ-A-250/12 OR AMS-QQ-A-250/12 OR AMS 4045 OR ASTM B209 receive ft	Firmed	-	8/22/18	60 ft	60.25 ft	60 ft	\$43.42/ft At 18/02/15	\$2,605.20
3 DAS 61 9-89		M7075T6S1.500X1.500		7075-T6S Sheet 1.5" Thick Plate X 1.5" Wide : MATERIAL: 7075-T6/T62 ALUMINUM SHEET AS PER QQ-A-250/12 OR AMS-QQ-A-250/12 OR AMS 4045 OR ASTM B209 receive ft	Firmed	-	8/22/18	80 ft	84.25 ft	80 ft	\$20.50/ft At 18/03/15	\$1,640.00
4		M7075T6S1.750X2.250		7075-T6 Sheet 1.750" X 2.250" : MATERIAL: 7075-T6/T62 ALUMINUM SHEET AS PER QQ-A-250/12 OR AMS-QQ-A-250/12 OR AMS 4045 OR ASTM B209 receive ft	Firmed	-	8/22/18	43.75 ft	0 ft	44 ft	\$40.86/ft	\$1,787.63
Line Item Note 20 pc - 48.25" long												
5		M7075T6S1.250X2.750		M7075T6S1.250" X2.750" Cut From Plate : MATERIAL: 7075-T6/T62 ALUMINUM SHEET AS PER QQ-A-250/12 OR AMS-QQ-A-250/12 OR AMS 4045 OR ASTM	Firmed	-	8/22/18	12 ft	0 ft	12 ft	\$31.20/ft	\$374.40



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER **PO040612**

Line Item	Job	Part	Supplier Part No	Description	Status	Account	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (USD)	Extended Price
				B209 receive ft								
6		M7075T6S0.375X3.000		7075 T6 Sheet 0.375" X 3.000" : MATERIAL: 7075-T6/T62 ALUMINUM SHEET AS PER QQ-A-250/12 OR AMS-QQ-A-250/12 OR AMS 4045 OR ASTM B209	Firmed	-	8/22/18	60 ft	0 ft	60 ft	\$11.86/ft	\$711.60
7		M7075T6S0.750X4.000		7075 T6 Sheet 0.750" X 4.000" : MATERIAL: 7075-T6/T62 ALUMINUM SHEET AS PER QQ-A-250/12 OR AMS-QQ-A-250/12 OR AMS 4045 OR ASTM B209	Firmed	-	8/22/18	40 ft	0 ft	40 ft	\$28.58/ft	\$1,143.20
8		M7075T6S1.000X1.250		7075 T6 Sheet 1.000X1.250 : MATERIAL: 7075-T6 OR T651/T6510/T6511/T62 ALUMINUM BAR AS PER AMS-QQ-A-225/9 OR AMS 4122/4123/4186/4187 OR PER AMS-QQ-A-200/11 receive ft	Firmed	-	8/22/18	12 ft	0 ft	12 ft	\$17.15/ft	\$205.80
9		M7075T73B1.250X02.000		7075-T73 Bar 1.250" X 2.000" Cut In Billet 30" Long : MATERIAL: 7075-T73 OR 7075-T7351/T73510/T73511 BAR PER AMS-QQ-A-200/11 OR AMS-QQ-A-225/9 OR AMS 4124 OR AMS-QQ-A-250/12 OR AMS 4078 receive ft	Firmed	-	8/22/18	25 ft	0 ft	25 ft	\$26.10/ft	\$652.50
Line Item Note 10 pcs cut at 30" long												
10		M7075T73R1.000		7075-T73 Round Bar 1.00 : MATERIAL: 7075-T73 OR 7075-T7351/T73510/T73511 ROUND BAR AS PER AMS-QQ-A-200/11 OR AMS-QQ-A-225/9 receive ft	Firmed	-	8/13/18	12 ft	0 ft	12 ft	\$11.47/ft	\$137.64
11		M303B1.500X4.000		303 Bar 1.500" X 4.000" : MATERIAL: AISI 303 SS BAR AS PER ASTM A582 NOTE: AISI 304/316 NOT ACCEPTABLE	Firmed	-	8/22/18	6 ft	0 ft	6 ft	\$238.50/ft	\$1,431.00
12		M303B1.000X1.000		M303B1.000 X 1.000 : MATERIAL: AISI 303 SS BAR AS PER ASTM A582 NOTE: AISI 304/316 NOT	Firmed	-	8/13/18	12 ft	0 ft	12 ft	\$18.72/ft	\$224.64

AUG 08 2018

AUG 13 2018

AUG 08 2018

DAS
61
9-86

[illegible]



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER PO040612

Line Item	Job	Part	Supplier Part No	Description	Status	Account	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (USD)	Extended Price
				ROUND BAR AS PER ASTM A582 NOTE:304/316 NOT ACCEPTABLE receive fit								
Grand Total:												\$15,549.37

Procurement Quality Clauses

A005 right of entry

A012 chemical and physical test report

A016 personnel qualification

A017 raw material identification (as applicable)

A026 certification of material conformance

A041 quality management system

A042 dart notification by supplier

A043 retention of quality documents

A048 counterfeit parts avoidance, detection, mitigation and disposition program

A049 supplier awareness

Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit www.dartaerospace.com for further explanation.

Plex 8/3/18 11:09 AM dart.baker.diane

SHIP TO: A M CASTLE & CO 3050 SOUTH HYDRAULIC WICHITA, KS 67216
SOLD TO: AM CASTLE & CO- SOLD TO 1420 KENSINGTON RD SUITE 220 OAK BROOK, IL 60523

KAISER ALUMINUM

Trentwood Works

PO Box 15108, Spokane Valley WA 99215-5108

15000 E Euclid, Spokane Valley WA 99216

Phone: (800) 367-2586

CERTIFIED TEST REPORT

Serial Number

4508307

CUSTOMER PO NUMBER: 456581-1	WORK PACKAGE:	CUSTOMER PART NUMBER: 750023	SHIP RUN/LOAD: 104263/7	GOVT CONTRACT NUMBER:
KAISER ORDER NO: 1253097-1	SHIP DATE: 30-APR-2018	ALLOY: 7075	CLAD: BARE	TEMPER: T651
PRODUCT DESCRIPTION: Sawed Plate				
WEIGHT SHIPPED: 3381 LB	QUANTITY: 19 PCS EST.	TRUCK B/L #: 2073405	GAUGE: 0.2500 IN (6.3500 MM)	DIAMETER/WIDTH: 48.500 IN (1231.9 MM)
			LENGTH: 144.500 IN (3670.3 MM)	

MHU 2203694: LOT 241692B3: 19 pieces;

Certified Specifications

AMS 4045/RevL
CMMP 025/RevV

AMS-QQ-A-250/12/RevA

ASTM B 209/Rev14

Test Code: 1512

Lot: 241692B3 Cast 611

Drop 09

Test Results

Ingot 3

Melted in USA

(ASTM E8/B557)

(EN 2002-1)

Tensile:	Temper	Dir / # Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
	T651	LT / 2 (Min:Max)	85.8 : 86.4 (592 : 596)	75.4 : 76.4 (520 : 527)	11.8 : 12.6

(ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual(wt%)	0.08	0.18	1.5	0.06	2.5	0.19	5.6	0.03	0.01	0.02	TOT 0.04

ALLOY LIMITS

	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER	MAX
7075												
MIN(wt%)	0.00	0.00	1.2	0.00	2.1	0.18	5.1	0.00	0.00	0.00	EACH	0.05
MAX(wt%)	0.40	0.50	2.0	0.30	2.9	0.28	6.1	0.20	0.05	0.05	TOT	0.15

Aluminum Remainder

ORDER COMMENTS

AMC CA-15409 R 3





CERTIFIED TEST REPORT

Serial Number

4508307

Trentwood Works

PO Box 15108, Spokane Valley WA 99215-5108

15000 E Euclid, Spokane Valley WA 99216

Phone: (800) 367-2586

CERTIFICATION

Kaiser Aluminum, Trentwood Works, is ISO 9001, AS9100, and ISO 14001 certified, and hereby certifies that all material shipped under this order:

- * has been inspected, tested, and found to be in conformance with the requirements of the specifications indicated herein.
- * All test equipment and measuring devices are calibrated and certified in accordance applicable specifications. For material thicknesses outside specification limits, mechanical properties are as shown herein and chemical composition meets specification requirements. Reported elongation values have been measured as elongation at fracture.
- * was melted in the United States of America or a qualifying country per DFARS 225.672-1(a), was manufactured in the United States of America, and meets the requirements of DFARS 252.225 for domestic content.
- * has been thermally processed in compliance with AMS 2772, where applicable.
- * is mercury free, within the limits of detection of ASTM E1215 (< 1ppm).
- * is in compliance with RoHS 2, European Union Directive 2011/65/EU.
- * is in compliance with European Chemical Agency, ECHA, REACH regulations, (EC) No 1907/2006, and Kaiser regularly monitors these regulations for updates.
- * is free of Conflict Minerals, as defined in Section 15.2 of the Dodd-Frank Act.
- * is free of weld repair.
- * meets the reporting requirements of EN10204, Type 3.1.

Any warranty is limited to that shown on Kaiser Aluminum's standard general terms and conditions of sale. Test reports are on file, subject to examination. Test reports shall not be reproduced except in full, without the written approval of the Kaiser Aluminum laboratory. The recording of false, fictitious or fraudulent statements or entries on the certificate may be punished as a felony under federal law.

JAMES HEMENWAY, TECHNICAL PROCESS MANAGER



SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: 7075-T6/T62/T65 ALUMINUM SHEET OR PLATE

SPECIFICATION: QQ-A-250/12 OR AMS-QQ-A-250/12
OR AMS 4045
OR ASTM B209

OR

PURCHASE MATERIAL: 7075-T6/T62/T651 ALCLAD ALUMINUM SHEET OR PLATE

SPECIFICATION: QQ-A-250/13 OR AMS-QQ-A-250/13
OR AMS-4048/4049
OR ASTM B209

PART NUMBER: M7075T6S | TTT | X | W | W | W | W |
| THK | | WIDTH |

WHERE "TTT" = THICKNESS (IN INCHES)
AND "W.WWW" = WIDTH (IN INCHES, OPTIONAL, FOR SPECIFYING CUT PLATE)

EG. 0.063" THICK SHEET = M7075T6S 063
EG. 3.5" WIDE BY 0.500" THICK PLATE = M7075T6S.500X3.500

PREFERRED SIZE: TTT BY 4FT BY 10FT FOR SHEET

RELEASED
2017 JUN 19
ECN 17-574

APPROVED

B	ADD-REF TO "PLATE" T651 TEMPER, AMS 4048, OPTIONAL WIDTH DIM (CAR16-149)	CP	17.05.05
A	NEW ISSUE	RF	10.11.08
REV.	DESCRIPTION	BY	DATE
DESIGN	RF		
DRAWN	CP		
CHECKED	ML		
MFG. APPR.	LL		
APPROVED	WM		
DE APPR.	D9		
DATE	17.05.05		
DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA			
DRAWING NO. M7075T6S			
REV. B			
SHEET 1 OF 1			
TITLE 7075-T6 SHEET/PLATE SPEC			
SCALE NTS			
COPYRIGHT © 2009 BY DART AEROSPACE LTD.			
THIS DOCUMENT IS NOT TO BE USED FOR ANY PURPOSE TO REPRODUCE OR TRANSMIT IN ANY FORM OR BY ANY MEANS WITHOUT PERMISSION IN WRITING FROM DART AEROSPACE LTD.			

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M70757656.000x0.250

PO / BATCH NO.: P0040612/S102371

DATE: 18/08/15

MATERIAL CERT REC'D: Yes

THICKNESS ORDERED: 0.250"

QUANTITY RECEIVED: 84.294t

THICKNESS RECEIVED: 0.250"

QUANTITY INSPECTED: 84.294t

SHEET SIZE ORDERED: 6"x~~0.250~~" 12.0ft

QUANTITY REJECTED: 0

SHEET SIZE RECEIVED: 6"x12.5ft

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y (N)	
CORRECT FINISH	(Y) N	
CORROSION	Y (N)	
CORRECT GRAIN DIRECTION	(Y) N	
CORRECT MATERIAL PER M-DRAWING	(Y) N	ASTM B209
CORRECT THICKNESS	(Y) N	
PHOTO REQUIRED	Y (N)	
CORRECT REF # TO LINK CERT	(Y) N	MT: 241692B3
CORRECT MATERIAL IDENTIFICATION	(Y) N	
CORRECT M# ON THE MATERIAL	(Y) N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y (N)	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y (N)	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION		ENGINEERING SIGNOFF (if required)	
INSPECTED BY: <u>At</u>		SIGNED OFF BY: _____	
DATE: <u>18/08/15</u>		DATE: _____	

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

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Constellium Rolled Products
Ravenswood, LLC

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A M CASTLE CO
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67216
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A M CASTLE
1420 KENSINGTON ROAD, SUITE 220
OAK BROOK IL
60523
US

A M CASTLE		110642463		4075		INCLUSION		Serial:20180330-0110642463		Pg 1of6	
CUSTOMER PURCHASE ORDER NO. & ITEM 453754						Constellium ORDER NO. 232826					
ALLOY 7075	CLAD	TEMPER T651	GAUGE 1.00000 in 25.40 mm	WIDTH 48.50000 in 1,232 mm	LENGTH 144.50000 in 3,670 mm	CERTIFICATION "Constellium Rolled Products, hereby certifies that metal shipped under this order has been inspected and found in conformance with the requirements of the applicable specifications as indicated herein. Any warranty is limited to that shown on Constellium Rolled Products' standard General Terms and Conditions of Sales. Test reports are on file, subject to examination." Constellium Rolled Products Ravenswood, LLC 859 Century Road P.O. BOX 68 RAVENSWOOD, WV 26164 USA  Dave Dunbarger - Laboratory Manager					
ITEM ORDERED SPEC PLATE, SAWED MILL FINISH											
CUSTOMER SPECIFICATION AMS 4045K											
PART NUMBER 752188			B/L NUMBER 97341		DATE SHIPPED 03/31/2018						
WT. SHIPPED 6420.000 LB		NO. OF PIECES 000009		GOVT. CONTRACT NO.							

ALL LOTS ON THIS CERTIFICATION ALSO CONFORM TO THE FOLLOWING REQUIREMENTS:

ASTM B594 REV 13 2013 100% SONIC W/ 0.12" DEADZONE Class A
AMS QQ-A-250/12A
AMS-STD-2154A 2012 TYPE1 CLASS A 100% SONIC MINUS DEADZONE
ASTM B209-14
BSS-7055B 2013 CLASS A 100% SONIC TESTED MINUS DEADZONE
CSTI006 REV E 2011 CLASS A 100% SONIC MINUS DEADZONE
DPS 4.713 REV AK 2012 CLASS A 100% SONIC MINUS DEADZONE
GAMPS 9101 REV B 2006 CLASS A 100% SONIC MINUS DEADZONE
PS 21211P 2010 CLASS A 100% SONIC MINUS DEADZONE

Load Details

Package	Net Lbs	Kg	Lot	Piece	Serial	Parent Lot
1001741754	710.000	322.050	9413629	01		
1001741754	710.000	322.050	9413629	02		
1001741754	710.000	322.050	9413629	03		
1001741758	705.000	319.782	9413631	01		
1001741758	705.000	319.782	9413631	02		
1001747251	720.000	326.586	9413633	03		
1001747252	720.000	326.586	9413634	01		
1001747252	720.000	326.586	9413634	02		
1001747252	720.000	326.586	9413634	03		

Lot: 9413629 (See test results below)





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OAK BROOK IL
60523
US

A M CASTLE		110642463		4075		INCLUSION		Serial:20180330-0110642463		Pg 2of6	
CUSTOMER PURCHASE ORDER NO. & ITEM 453754						Constellium ORDER NO. 232826					
ALLOY 7075	CLAD	TEMPER T651	GAUGE 1.00000 in 25.40 mm	WIDTH 48.50000 in 1,232 mm	LENGTH 144.50000 in 3,670 mm		CERTIFICATION "Constellium Rolled Products, hereby certifies that metal shipped under this order has been inspected and found in conformance with the requirements of the applicable specifications as indicated herein. Any warranty is limited to that shown on Constellium Rolled Products' standard General Terms and Conditions of Sales. Test reports are on file, subject to examination." Constellium Rolled Products Ravenswood, LLC 859 Century Road P.O. BOX 68 RAVENSWOOD, WV 26164 USA  Dave Dunbarger - Laboratory Manager				
ITEM ORDERED SPEC PLATE, SAWED MILL FINISH											
CUSTOMER SPECIFICATION AMS 4045K											
PART NUMBER 752188			B/L NUMBER 97341		DATE SHIPPED 03/31/2018						
WT. SHIPPED 6420.000 LB		NO. OF PIECES 000009		GOVT. CONTRACT NO.							

Tensile - Room Temperature (US)

		Ultimate (KSI)		Yield (KSI)		Elongation (%)		Report
Direction	Tests	Min	Max	Min	Max	Min	Max	
LT	02	83.7	84.3	74.6	75.0	13.0	14.0	

Tensile - Room Temperature (SI)

		Ultimate (N/MM2)		Yield (N/MM2)		Elongation (%)		Report
Direction	Tests	Min	Max	Min	Max	Min	Max	
LT	02	577	581	514	517	13.0	14.0	

Chemistry (Actual)

	SI	FE	CU	MN	MG	CR	ZN	TI	ZR
Core	0.09	0.18	1.41	0.04	2.61	0.20	5.66	0.04	0.01

OTHERS-EACH: .05 MAX. OTHERS TOTAL: .15 MAX. AL REMAINDER

All material contained in this lot was cast and manufactured in the USA

Lot: **9413631** (See test results below)





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A M CASTLE		110642463		4075		INCLUSION		Serial:20180330-0110642463		Pg 3of6		
CUSTOMER PURCHASE ORDER NO. & ITEM 453754						Constellium ORDER NO. 232826						
ALLOY 7075	CLAD	TEMPER T651	GAUGE 1.00000 in 25.40 mm	WIDTH 48.50000 in 1,232 mm	LENGTH 144.50000 in 3,670 mm	CERTIFICATION "Constellium Rolled Products, hereby certifies that metal shipped under this order has been inspected and found in conformance with the requirements of the applicable specifications as indicated herein. Any warranty is limited to that shown on Constellium Rolled Products' standard General Terms and Conditions of Sales. Test reports are on file, subject to examination." Constellium Rolled Products Ravenswood, LLC 859 Century Road P.O. BOX 68 RAVENSWOOD, WV 26164 USA  Dave Dunbarger - Laboratory Manager						
ITEM ORDERED SPEC PLATE, SAWED MILL FINISH												
CUSTOMER SPECIFICATION AMS 4045K												
PART NUMBER 752188			B/L NUMBER 97341		DATE SHIPPED 03/31/2018							
WT. SHIPPED 6420.000 LB			NO. OF PIECES 000009		GOVT. CONTRACT NO.							

Tensile - Room Temperature (US)

		Ultimate (KSI)		Yield (KSI)		Elongation (%)		Report
Direction	Tests	Min	Max	Min	Max	Min	Max	
LT	02	82.6	83.0	73.3	73.9	12.5	13.0	

Tensile - Room Temperature (SI)

		Ultimate (N/MM2)		Yield (N/MM2)		Elongation (%)		Report
Direction	Tests	Min	Max	Min	Max	Min	Max	
LT	02	570	572	505	510	12.5	13.0	

Chemistry (Actual)

	SI	FE	CU	MN	MG	CR	ZN	TI	ZR
Core	0.09	0.18	1.41	0.04	2.61	0.20	5.66	0.04	0.01

OTHERS-EACH: .05 MAX. OTHERS TOTAL: .15 MAX. AL REMAINDER

All material contained in this lot was cast and manufactured in the USA

Lot: 9413633 (See test results below)





Constellium

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Materials Testing Laboratory


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A M CASTLE		110642463		4075		INCLUSION		Serial:20180330-0110642463		Pg 4of6	
CUSTOMER PURCHASE ORDER NO. & ITEM 453754						Constellium ORDER NO. 232826		CERTIFICATION "Constellium Rolled Products, hereby certifies that metal shipped under this order has been inspected and found in conformance with the requirements of the applicable specifications as indicated herein. Any warranty is limited to that shown on Constellium Rolled Products' standard General Terms and Conditions of Sales. Test reports are on file, subject to examination." Constellium Rolled Products Ravenswood, LLC 859 Century Road P.O. BOX 68 RAVENSWOOD, WV 26164 USA  Dave Dunbarger - Laboratory Manager			
ALLOY 7075	CLAD	TEMPER T651	GAUGE 1.00000 in 25.40 mm	WIDTH 48.50000 in 1,232 mm	LENGTH 144.50000 in 3,670 mm						
ITEM ORDERED SPEC PLATE, SAWED MILL FINISH											
CUSTOMER SPECIFICATION AMS 4045K											
PART NUMBER 752188			B/L NUMBER 97341		DATE SHIPPED 03/31/2018						
WT. SHIPPED 6420.000 LB		NO. OF PIECES 000009		GOVT. CONTRACT NO.							

Tensile - Room Temperature (US)

		Ultimate (KSI)		Yield (KSI)		Elongation (%)		Report
Direction	Tests	Min	Max	Min	Max	Min	Max	
LT	02	82.8	83.0	73.4	73.7	13.5	14.0	

Tensile - Room Temperature (SI)

		Ultimate (N/MM2)		Yield (N/MM2)		Elongation (%)		Report
Direction	Tests	Min	Max	Min	Max	Min	Max	
LT	02	571	572	506	508	13.5	14.0	

Chemistry (Actual)

	SI	FE	CU	MN	MG	CR	ZN	TI	ZR
Core	0.05	0.11	1.41	0.05	2.57	0.20	5.55	0.04	0.00

OTHERS-EACH: .05 MAX. OTHERS TOTAL: .15 MAX. AL REMAINDER

All material contained in this lot was cast and manufactured in the USA

Lot: 9413634 (See test results below)





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A M CASTLE		110642463		4075		INCLUSION		Serial:20180330-0110642463		Pg 5of6	
CUSTOMER PURCHASE ORDER NO. & ITEM 453754						Constellium ORDER NO. 232826		CERTIFICATION "Constellium Rolled Products, hereby certifies that metal shipped under this order has been inspected and found in conformance with the requirements of the applicable specifications as indicated herein. Any warranty is limited to that shown on Constellium Rolled Products' standard General Terms and Conditions of Sales. Test reports are on file, subject to examination." Constellium Rolled Products Ravenswood, LLC 859 Century Road P.O. BOX 68 RAVENSWOOD, WV 26164 USA  Dave Dunbarger - Laboratory Manager			
ALLOY 7075	CLAD	TEMPER T651	GAUGE 1.00000 in 25.40 mm	WIDTH 48.50000 in 1,232 mm	LENGTH 144.50000 in 3,670 mm						
ITEM ORDERED SPEC PLATE, SAWED MILL FINISH											
CUSTOMER SPECIFICATION AMS 4045K											
PART NUMBER 752188			B/L NUMBER 97341		DATE SHIPPED 03/31/2018						
WT. SHIPPED 6420.000 LB		NO. OF PIECES 000009		GOVT. CONTRACT NO.							

Tensile - Room Temperature (US)

		Ultimate (KSI)		Yield (KSI)		Elongation (%)		Report
Direction	Tests	Min	Max	Min	Max	Min	Max	
LT	02	82.4	83.1	72.7	73.8	13.0	14.0	

Tensile - Room Temperature (SI)

		Ultimate (N/MM2)		Yield (N/MM2)		Elongation (%)		Report
Direction	Tests	Min	Max	Min	Max	Min	Max	
LT	02	568	573	501	509	13.0	14.0	

Chemistry (Actual)

	SI	FE	CU	MN	MG	CR	ZN	TI	ZR
Core	0.05	0.11	1.41	0.05	2.57	0.20	5.55	0.04	0.00

OTHERS-EACH: .05 MAX. OTHERS TOTAL: .15 MAX. AL REMAINDER

All material contained in this lot was cast and manufactured in the USA

QUALITY TEXTS:
AMC CA-15403 R 8






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OAK BROOK IL
60523
US

A M CASTLE		110642463		4075		INCLUSION		Serial:20180330-0110642463		Pg 6of6	
CUSTOMER PURCHASE ORDER NO. & ITEM 453754						Constellium ORDER NO. 232826					
ALLOY 7075	CLAD	TEMPER T651	GAUGE 1.00000 in 25.40 mm	WIDTH 48.50000 in 1,232 mm	LENGTH 144.50000 in 3,670 mm	CERTIFICATION "Constellium Rolled Products, hereby certifies that metal shipped under this order has been inspected and found in conformance with the requirements of the applicable specifications as indicated herein. Any warranty is limited to that shown on Constellium Rolled Products' standard General Terms and Conditions of Sales. Test reports are on file, subject to examination." Constellium Rolled Products Ravenswood, LLC 859 Century Road P.O. BOX 68 RAVENSWOOD, WV 26164 USA  Dave Dunbarger - Laboratory Manager					
ITEM ORDERED SPEC PLATE, SAWED MILL FINISH											
CUSTOMER SPECIFICATION AMS 4045K											
PART NUMBER 752188			B/L NUMBER 97341		DATE SHIPPED 03/31/2018						
WT. SHIPPED 6420.000 LB			NO. OF PIECES 000009		GOVT. CONTRACT NO.						

THIS TEST REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL, WITHOUT THE WRITTEN APPROVAL OF THE LABORATORY OR AUTHORIZED QUALITY DELEGATE. THE RECORDING OF FALSE, FICTITIOUS, OR FRAUDULENT STATEMENTS OR ENTRIES ON THE CERTIFICATE MAY BE PUNISHED AS A FELONY UNDER FEDERAL LAW.

CHEMISTRY BY OES: ARKSPARK

CHEMISTRIES REPORTED IN PERCENTAGE BY WEIGHT

WHEN FRACTURE TOUGHNESS TEST REQUIRED, TESTED PER ASTM E399

WHEN TENSILE TEST REQUIRED, TESTED PER ASTM E8; B557

DUNS Number: 090570149; CAGE Code: 1YW19

Mercury is not a normal contaminant in aluminum alloys and neither mercury nor any of its compounds were utilized in the manufacture of our product.

"END OF CERTIFICATION"



SPECIFICATION CONTROL DRAWING

A PURCHASE MATERIAL: 7075-T6/T62/T651 ALUMINUM SHEET OR PLATE

SPECIFICATION:
QQ-A-250/12 OR AMS-QQ-A-250/12
OR AMS 4045
OR ASTM B209

OR

B PURCHASE MATERIAL: 7075-T6/T62/T651 ALCLAD ALUMINUM SHEET OR PLATE

B SPECIFICATION:
QQ-A-250/13 OR AMS-QQ-A-250/13
OR AMS 4048 / 4049
OR ASTM B209

B PART NUMBER: M7075T6S | TTT | X | W | WWW |
| THK | | WIDTH |

B WHERE "TTT" = THICKNESS (IN INCHES)
AND "W.WWW" = WIDTH (IN INCHES, OPTIONAL, FOR SPECIFYING CUT PLATE)
EG. 0.063" THICK SHEET = M7075T6S 063
EG. 3.5" WIDE BY 0.500" THICK PLATE = M7075T6S.500X3.500

B PREFERRED SIZE: .TTT BY 4FT BY 10FT FOR SHEET

RELEASED

2017 JUN 19
ECN 17-574

APPROVED

B	ADD: REF TO "PLATE", "T651" TEMPER, AMS 4048, OPTIONAL WIDTH DIM (CAR16-149)	CP	17.05.05
A	NEW ISSUE	RF	10.11.08
REV.	DESCRIPTION	BY	DATE
DESIGN	RF		
DRAWN	CP		
CHECKED	ML		
MFG. APPR.	LL		
APPROVED	WM		
DE APPR.	DS		
DATE	17.05.05		
DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA			
DRAWING NO. M7075T6S			
REV. B SHEET 1 OF 1			
TITLE 7075-T6 SHEET/PLATE SPEC NTS			
SCALE			
DATE 17.05.05			
CORPORATE DESIGN BY DART AEROSPACE LTD THIS DOCUMENT IS UNCLASSIFIED AND UNCONTROLLED EXCEPT AS NOTED NOT TO BE USED FOR ANY PURPOSE OR COPIED OR REPRODUCED IN ANY FORM OR BY ANY MEANS WITHOUT THE WRITTEN PERMISSION OF DART AEROSPACE LTD			

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M7075 T656.20x1.00
 DATE: 18/08/15

PO / BATCH NO.: P000612/S102372

MATERIAL CERT REC'D: Yes
 QUANTITY RECEIVED: 60.2'
 QUANTITY INSPECTED: 60.2'
 QUANTITY REJECTED: 0

THICKNESS ORDERED: 1"
 THICKNESS RECEIVED: 1"
 SHEET SIZE ORDERED: 24x48
 SHEET SIZE RECEIVED: 24x48

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y <input checked="" type="checkbox"/> N	
CORRECT FINISH	<input checked="" type="checkbox"/> Y N	
CORROSION	Y <input checked="" type="checkbox"/> N	
CORRECT GRAIN DIRECTION	<input checked="" type="checkbox"/> Y N	
CORRECT MATERIAL PER M-DRAWING	<input checked="" type="checkbox"/> Y N	AMS 4045
CORRECT THICKNESS	<input checked="" type="checkbox"/> Y N	
PHOTO REQUIRED	Y <input checked="" type="checkbox"/> N	
CORRECT REF # TO LINK CERT	<input checked="" type="checkbox"/> Y N	LT: 9413631
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="checkbox"/> Y N	
CORRECT M# ON THE MATERIAL	<input checked="" type="checkbox"/> Y N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y <input checked="" type="checkbox"/> N	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y <input checked="" type="checkbox"/> N	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL	HRC	HRB	DUR A	DUR D	WEBSTER
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION		ENGINEERING SIGNOFF (if required)	
INSPECTED BY: <u>AT</u>	SIGNED OFF BY: _____		
DATE: <u>18/08/15</u>	DATE: _____		

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in



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Ravenswood, LLC

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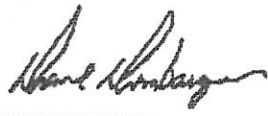
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A M CASTLE		110628834		4075		INCLUSION		Serial:20180222-0110628834		Pg 1of3	
CUSTOMER PURCHASE ORDER NO. & ITEM 450879						Constellium ORDER NO. 230353					
ALLOY 7075		CLAD		TEMPER T651		GAUGE 1.50000 in 38.10 mm		WIDTH 48.50000 in 1,232 mm		LENGTH 144.50000 in 3,670 mm	
ITEM ORDERED SPEC PLATE, SAWED MILL FINISH											
CUSTOMER SPECIFICATION AMS QQ-A-250/12A											
PART NUMBER 750412				B/L NUMBER 95243				DATE SHIPPED 02/22/2018			
WT. SHIPPED 8440.000 LB				NO. OF PIECES 000008				GOVT. CONTRACT NO.			
<div style="text-align: right;"> Dave Dunbarger - Laboratory Manager</div>											

CERTIFICATION
"Constellium Rolled Products, hereby certifies that metal shipped under this order has been inspected and found in conformance with the requirements of the applicable specifications as indicated herein. Any warranty is limited to that shown on Constellium Rolled Products' standard General Terms and Conditions of Sales. Test reports are on file, subject to examination."
Constellium Rolled Products Ravenswood, LLC
859 Century Road
P.O. BOX 68
RAVENSWOOD, WV 26164 USA

ALL LOTS ON THIS CERTIFICATION ALSO CONFORM TO THE FOLLOWING REQUIREMENTS:

ASTM B594 REV 13 2013 100% SONIC W/ 0.125" DEADZONE Class A
AMS 4045K
AMS-STD-2154A 2012 TYPE1 CLASS A 100% SONIC MINUS DEADZONE
ASTM B209-14
BSS-7055B 2013 CLASS A 100% SONIC TESTED MINUS DEADZONE
CST1006 REV E 2011 CLASS A 100% SONIC MINUS DEADZONE
DPS 4.713 REV AK 2012 CLASS A 100% SONIC MINUS DEADZONE
GAMPS 9101 REV B 2006 CLASS A 100% SONIC MINUS DEADZONE
PS 2121P 2010 CLASS A 100% SONIC MINUS DEADZONE

Load Details

Package	Net Lbs	Kg	Lot	Piece	Serial	Parent Lot
1001715431	1,055.000	478.540	9410098	01		
1001715431	1,055.000	478.540	9410098	02		
1001715431	1,055.000	478.540	9410098	03		
1001715431	1,055.000	478.540	9410098	04		
1001715432	1,055.000	478.540	9410097	01		
1001715432	1,055.000	478.540	9410097	02		
1001715432	1,055.000	478.540	9410097	03		
1001715432	1,055.000	478.540	9410097	04		

Lot: 9410098 (See test results below)

Tensile - Room Temperature (US)

Direction	Tests	Ultimate (KSI)		Yield (KSI)		Elongation (%)		Report
		Min	Max	Min	Max	Min	Max	
LT	02	80.4	80.9	69.9	71.4	12.5	13.0	





Constellium Rolled Products
Ravenswood, LLC

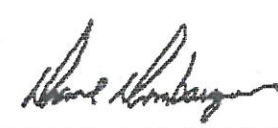
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A M CASTLE 110628834 4075 INCLUSION Serial:20180222-0110628834 Pg 2of3

CUSTOMER PURCHASE ORDER NO. & ITEM 450879				Constellium ORDER NO. 230353		CERTIFICATION "Constellium Rolled Products, hereby certifies that metal shipped under this order has been inspected and found in conformance with the requirements of the applicable specifications as indicated herein. Any warranty is limited to that shown on Constellium Rolled Products' standard General Terms and Conditions of Sales. Test reports are on file, subject to examination." Constellium Rolled Products Ravenswood, LLC 859 Century Road P.O. BOX 68 RAVENSWOOD, WV 26164 USA  Dave Dunberger - Laboratory Manager	
ALLOY 7075	CLAD	TEMPER T651	GAUGE 1.50000 in 38.10 mm	WIDTH 48.50000 in 1,232 mm	LENGTH 144.50000 in 3,670 mm		
ITEM ORDERED SPEC PLATE, SAWED MILL FINISH							
CUSTOMER SPECIFICATION AMS QQ-A-250/12A							
PART NUMBER 750412		B/L NUMBER 95243		DATE SHIPPED 02/22/2018			
WT. SHIPPED 8440.000 LB		NO. OF PIECES 000008		GOVT. CONTRACT NO.			

Tensile - Room Temperature (SI)								Report
		Ultimate (N/MM2)		Yield (N/MM2)		Elongation (%)		
Direction	Tests	Min	Max	Min	Max	Min	Max	
LT	02	554	558	482	492	12.5	13.0	

Chemistry (Actual)									
	SI	FE	CU	MN	MG	CR	ZN	TI	ZR
Core	0.06	0.15	1.45	0.06	2.58	0.19	5.59	0.03	0.01

OTHERS-EACH: .05 MAX. OTHERS TOTAL: .15 MAX. AL REMAINDER

All material contained in this lot was cast and manufactured in the USA

Lot: 9410097 (See test results below)

Tensile - Room Temperature (US)								Report
		Ultimate (KSI)		Yield (KSI)		Elongation (%)		
Direction	Tests	Min	Max	Min	Max	Min	Max	
LT	02	80.1	80.3	69.1	70.5	12.0	12.5	





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US

A M CASTLE		110628834		4075		INCLUSION		Serial:20180222-0110628834		Pg 3of3					
CUSTOMER PURCHASE ORDER NO. & ITEM 450879						Constellium ORDER NO. 230353									
ALLOY 7075		CLAD		TEMPER T651		GAUGE 1.50000 in 38.10 mm		WIDTH 48.50000 in 1,232 mm		LENGTH 144.50000 in 3,670 mm					
ITEM ORDERED SPEC PLATE, SAWED MILL FINISH						CERTIFICATION "Constellium Rolled Products, hereby certifies that metal shipped under this order has been inspected and found in conformance with the requirements of the applicable specifications as indicated herein. Any warranty is limited to that shown on Constellium Rolled Products' standard General Terms and Conditions of Sales. Test reports are on file, subject to examination." Constellium Rolled Products Ravenswood, LLC 859 Century Road P.O. BOX 68 RAVENSWOOD, WV 26164 USA  Dave Dunbarger - Laboratory Manager									
CUSTOMER SPECIFICATION AMS QQ-A-250/12A				PART NUMBER 750412								B/L NUMBER 95243		DATE SHIPPED 02/22/2018	
WT. SHIPPED 8440.000 LB				NO. OF PIECES 000008								GOVT. CONTRACT NO.			
Tensile - Room Temperature (SI)															
		Ultimate (N/MM2)		Yield (N/MM2)		Elongation (%)		Report							
Direction	Tests	Min	Max	Min	Max	Min	Max								
LT	02	552	554	476	486	12.0	12.5								
Chemistry (Actual)															
	SI	FE	CU	MN	MG	CR	ZN	TI	ZR						
Core	0.06	0.15	1.45	0.06	2.58	0.19	5.59	0.03	0.01						
OTHERS-EACH: .05 MAX. OTHERS TOTAL: .15 MAX. AL REMAINDER															
All material contained in this lot was cast and manufactured in the USA															
QUALITY TEXTS: AMC CA-15403A R 7															
<p>THIS TEST REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL, WITHOUT THE WRITTEN APPROVAL OF THE LABORATORY OR AUTHORIZED QUALITY DELEGATE. THE RECORDING OF FALSE, FICTITIOUS, OR FRAUDULENT STATEMENTS OR ENTRIES ON THE CERTIFICATE MAY BE PUNISHED AS A FELONY UNDER FEDERAL LAW.</p> <p>CHEMISTRY BY DES: ARKSPARK CHEMISTRIES REPORTED IN PERCENTAGE BY WEIGHT WHEN FRACTURE TOUGHNESS TEST REQUIRED, TESTED PER ASTM E399 WHEN TENSILE TEST REQUIRED, TESTED PER ASTM E8: B557 DUNS Number: 090570149; CAGE Code: 1YW19</p> <p>Mercury is not a normal contaminant in aluminum alloys and neither mercury nor any of its compounds were utilized in the manufacture of our product.</p> <p>"END OF CERTIFICATION"</p> 															
P-860-155D REVISED: 01 2018															

SPECIFICATION CONTROL DRAWING

A PURCHASE MATERIAL: 7075-T6/T62/T651 ALUMINUM SHEET OR PLATE

SPECIFICATION:

QQ-A-250/12 OR AMS-QQ-A-250/12
OR AMS 4045
OR ASTM B209

OR

B PURCHASE MATERIAL: 7075-T6/T62/T651 ALCLAD ALUMINUM SHEET OR PLATE

SPECIFICATION:

QQ-A-250/13 OR AMS-QQ-A-250/13
OR AMS 4046 / 4049
OR ASTM B209

B PART NUMBER:

M7075T6S | TTT | X | W | WWW |
| THK | | WIDTH |

WHERE "TTT" = THICKNESS (IN INCHES)
AND "W.WWWW" = WIDTH (IN INCHES, OPTIONAL, FOR SPECIFYING CUT PLATE)

EG. 0.063" THICK SHEET = M7075T6S 063
EG. 3.5" WIDE BY 0.500" THICK PLATE = M7075T6S.500X3.500

B PREFERRED SIZE:

.TTT BY 4FT BY 10FT FOR SHEET

RELEASED

2017 JUN 19 4
ECN 11-574

APPROVED

B	ADD: REF TO "PLATE", "T651" TEMPER, AMS 4048, OPTIONAL WIDTH DIM (CAR16-149)	CP	17.05.05
A	NEW ISSUE	RF	10.11.03
REV	DESCRIPTION	BY	DATE
DESIGN		RF	
DRAWN		CP	
CHECKED		ML	
MFG. APPR.		LL	
APPROVED		WM	
DE APPR.		DS	
DATE	17.05.05		
DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA			
DRAWING NO. REV. B			
M7075T6S SHEET 1 OF 1			
TITLE SCALE			
7075-T6 SHEET/PLATE SPEC NTS			
DATE 17.05.05			
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MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M70757651.500x1.500

PO / BATCH NO.: PO 040612/S102373

DATE: 18/08/15

MATERIAL CERT REC'D: Yes
 QUANTITY RECEIVED: 84.24 ft
 QUANTITY INSPECTED: 84.24 ft
 QUANTITY REJECTED: 0

THICKNESS ORDERED: 1.500"
 THICKNESS RECEIVED: 1.500"
 SHEET SIZE ORDERED: —
 SHEET SIZE RECEIVED: —

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y (N)	
CORRECT FINISH	(Y) N	
CORROSION	Y (N)	
CORRECT GRAIN DIRECTION	(Y) N	
CORRECT MATERIAL PER M-DRAWING	(Y) N	AMS QA-A-250/12
CORRECT THICKNESS	(Y) N	
PHOTO REQUIRED	Y (N)	
CORRECT REF # TO LINK CERT	(Y) N	Lot 9410097
CORRECT MATERIAL IDENTIFICATION	(Y) N	
CORRECT M# ON THE MATERIAL	(Y) N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y (N)	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y (N)	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>AT</u>	SIGNED OFF BY: _____
DATE: <u>18/08/15</u>	DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in